



Mini-Circuits

**HAND  
FLEX™**

# Coaxial Cable

**047-3SMP+**

50Ω 3 inch DC to 18 GHz SMP Female

## THE BIG DEAL

- Wideband frequency coverage, DC to 18 GHz
- Low Loss, 0.26 dB at 18 GHz
- Excellent Return Loss, 19 dB at 18 GHz
- Hand formable to almost any custom shape without special bending tools
- 3.2mm bend radius for tight installations
- Connector interface, meets MIL-STD-348
- Ideal for interconnect of assembled systems



*Generic photo used for illustration purposes only*

Model No.	047-3SMP+
Case Style	BZ2551-3
Connectors	SMP Female

## +RoHS Compliant

The +Suffix identifies RoHS Compliance.  
See our website for methodologies and qualifications

## APPLICATIONS

- Replacement for custom bent 0.047" semi-rigid cables
- Communication receivers and transmitters
- Military and aerospace system
- Environmental and test chambers

## PRODUCT OVERVIEW

The 047 Series Hand-Flex Coaxial Cables are ideal for interconnection of coaxial components or sub-systems in tight spaces. The outer shield is tin plated copper braid and tin soaked, which minimizes signal leakage and at the same time flexible for easy bend. The 047 Series Hand-Flex Cables features gold plated beryllium copper construction. The 047 Series Hand-Flex cables are available in variety of length to meet your requirements.

## KEY FEATURES

Feature	Advantages
Hand-Formable RF Cables	The 047 Series Hand-Flex cables are hand formable making them ideal for use integrating coaxial components and sub-assemblies without the need for special cable-bending tools and alleviating the risk of damage during the bending process typical of semi-rigid coaxial cable assemblies.
Tight Bend Radius, 3.2mm	Capable of only 3.2mm bend radius, the 047 Hand Flex series is able to make connections in tight spaces making these cables ideal for dense system integration
Excellent Return Loss, <ul style="list-style-type: none"><li>• 31 dB at 6 GHz</li><li>• 19 dB at 18 GHz</li></ul>	The 047 Series Hand-Flex Cables are ideally suited for interconnecting a wide variety of RF components while minimizing VSWR ripple contribution due to mating cables & connectors.
Good Power Handling Capability: <ul style="list-style-type: none"><li>• 22.5W at 0.5 GHz</li><li>• 4.50W at 18 GHz</li></ul>	Mini-Circuits' 047 Cable series can support medium to high RF power levels enabling these cables to be used in the transmit path.
SMP-F blind Mate push-on/snap-on connector on one side	Quick connect/disconnect saving time.

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REV. A  
ECO-016814  
047-3SMP+  
WP/RS/CP  
230203

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**ELECTRICAL SPECIFICATIONS AT +25°C**

Parameter	Frequency (GHz)	Min.	Typ.	Max.	Units
Frequency Range		DC	-	18	GHz
Length <sup>1</sup>		3			inches
Insertion Loss	DC - 2	-	0.11	0.38	dB
	2 - 6	-	0.17	0.69	
	6 - 10	-	0.27	0.88	
	10 - 18	-	0.34	1.19	
Return Loss	DC - 2	17.7	31	-	dB
	2 - 6	20	29	-	
	6 - 10	17	29	-	
	10 - 18	17	28	-	

1. Custom sizes available, consult factory.

**ABSOLUTE MAXIMUM RATINGS**

Parameter	Ratings
Operating Temperature	-45°C to 85°C
Storage Temperature	-45°C to 85°C
Power Handling at 25°C, Sea Level	22.5W at 0.5 GHz
	15.5W at 1 GHz
	11W at 2 GHz
	5.5W at 6 GHz
	4.6W at 10 GHz
	4.5W at 18 GHz

Permanent damage may occur if any of these limits are exceeded.



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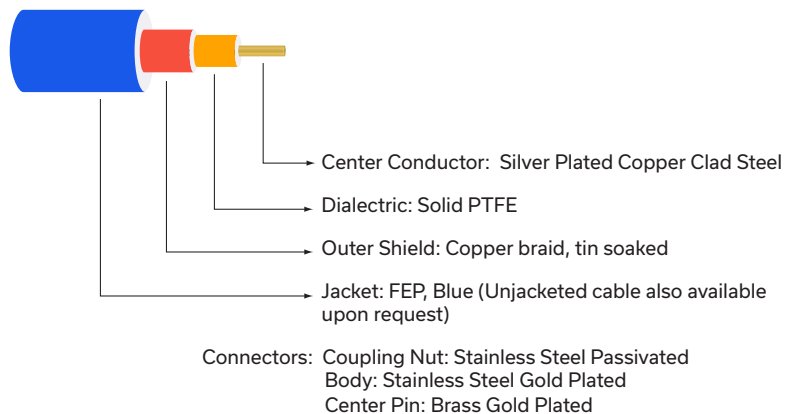
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# Coaxial Cable

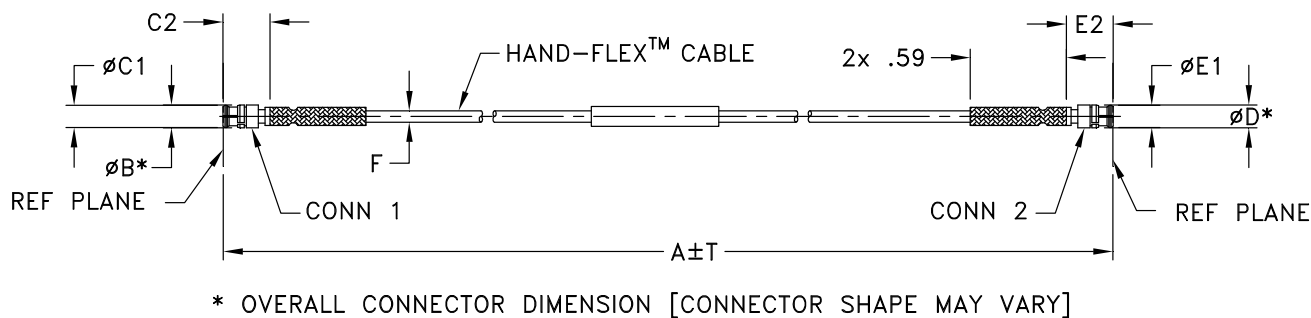
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## CABLE CONSTRUCTION



## OUTLINE DRAWING



## OUTLINE DIMENSIONS (Inch/mm)

A	B	C1	C2	D	E1	E2	F	T	wt grams
3.0	.14	.135	.287	.14	.135	.289	.069	0.05	1.37
76.20	3.56	3.43	7.29	3.56	3.43	7.34	1.75	1.27	

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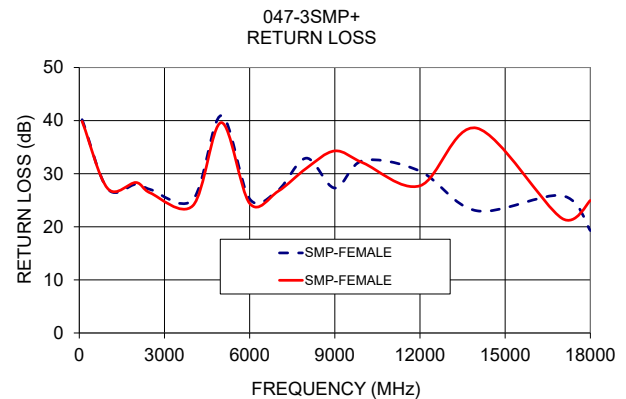
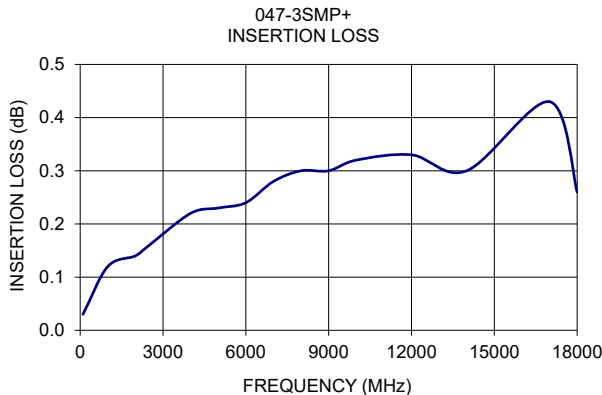
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## TYPICAL PERFORMANCE DATA AND CHARTS

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	
		SMP-Female	SMP-Female
100	0.03	40.2	39.9
1000	0.12	27.2	27.2
2000	0.14	28.0	28.3
2500	0.16	27.0	26.4
4000	0.22	25.1	24.0
5000	0.23	41.0	39.6
6000	0.24	25.3	24.4
7000	0.28	26.9	26.7
8000	0.30	32.9	31.0
9000	0.30	27.3	34.3
10000	0.32	32.5	32.0
12000	0.33	30.5	27.7
14000	0.30	23.0	38.6
17000	0.43	25.9	21.6
18000	0.26	19.3	25.0



### NOTES

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/terms/viewterm.html](http://www.minicircuits.com/terms/viewterm.html)



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